

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference GR 98P2433P	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/06309	International filing date (day/month/year) 27 August 1999 (27.08.99)	Priority date (day/month/year) 28 August 1998 (28.08.98)
International Patent Classification (IPC) or national classification and IPC H04L 1/00		
Applicant SIEMENS AKTIENGESELLSCHAFT		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 17 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 28 March 2000 (28.03.00)	Date of completion of this report 17 November 2000 (17.11.2000)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP99/06309

I. Basis of the report

1. This report has been drawn on the basis of (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.):

- ☐ the international application as originally filed.
- ☒ the description, pages 9,11,13-18, as originally filed,
pages _____, filed with the demand,
pages 1-8,10,12, filed with the letter of 15 September 2000 (15.09.2000),
pages _____, filed with the letter of _____.
- ☒ the claims, Nos. _____, as originally filed,
Nos. _____, as amended under Article 19,
Nos. _____, filed with the demand,
Nos. 1-17, filed with the letter of 15 September 2000 (15.09.2000),
Nos. _____, filed with the letter of _____.
- ☒ the drawings, sheets/fig 1/4,2/4,4/4, as originally filed,
sheets/fig _____, filed with the demand,
sheets/fig 3/4, filed with the letter of 15 September 2000 (15.09.2000),
sheets/fig _____, filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-17	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-17	NO
Industrial applicability (IA)	Claims	1-17	YES
	Claims		NO

2. Citations and explanations

1. This report makes reference to the following international search report citations:

D1 GB-A-2 303 769 (NIPPON ELECTRIC CO) 26 February 1997 (1997-02-26)

D2 EP-A-0 731 577 (PHILIPS COMM ENTREPRISE; PHILIPS ELECTRONICS NV (NL)), 11 September 1996 (1996-09-11)

D3 WO-A-97 03403 (HONKASALO ZHICHUN, NOKIA MOBILE PHONES LTD (FI); NOKIA TELECOMMUNI), 30 January 1997 (1997-01-30),

D4 WO-A-96 04718 (QUALCOMM INC), 15 February 1996 (1996-02-15),

D5 WO-A-93 00751 (MICROCOM SYSTEMS INC) 7 January 1993 (1993-01-07).

2. **The subject matter of independent Claim 1 does not involve an inventive step** pursuant to PCT Article 33(3) for the following reasons.

D3 discloses, according to the most important features of Claim 1, a device for setting transmitter power for transferring digital information via a transmission channel by control means for increasing or lowering the transmitter power (page 13, line 9 to page 14, line 29; page 15,

lines 3-8) and a quality measuring device for conveying transmission quality of a transmission channel (see below), the control means setting the transmitter power for transferring digital information in relation to [...] the transmission quality determined by the quality measuring device and a transmission quality (see below) which is required for a transmission data rate used to transfer the digital information with a determined maximum permissible error rate (page 4, lines 10-15).

D3, which relates to GSM networks, (page 2, line 24) indicates that power adjustment algorithms of cellular radio networks are also used (page 15, lines 3-8: "*Standard Power Adjustment Algorithms*"). In the GSM network the transmitter power of a base station is adjusted as described below.

The mobile station measures the transmission quality of the channel. This transmission quality is then transferred to the base station. Said base station sets its transmitter power according to different criteria and, in particular, according to an admissible bit error rate.

In other words, the mobile station has a "*quality measuring device for conveying transmission quality of the transmission channel, the control means [of the base station] setting the transmitter power for transferring digital information in relation to [...] the transmission quality, determined by the quality measuring device, and a transmission quality*".

The subject matter of Claim 1 differs in that the control means sets the transmitter power for

transferring digital information in relation to a difference between the transmission quality determined by the quality measuring device and a theoretical transmission quality.

The problem to be solved by the present invention can therefore be considered to be how the control means calculates the transmitter power required using the transmission quality of the channel.

It is obvious to a person skilled in the art to compare this transmission quality with a particular value, in particular to calculate a difference and to determine a corresponding transmitter power according to the difference.

A person skilled in the art having the knowledge of the disclosure of D3 would therefore arrive at a device according to Claim 1 without being inventive by using this general knowledge.

3. **The subject matter of independent Claim 6 does not involve an inventive step**, pursuant to PCT Article 33(3) for the reasons set out below.

Since Claim 6 describes the method that is used in the device of Claim 1, Claim 6, as compared with Claim 1, itself not inventive, does not provide any additional inventive features.

4. **The subject matter of independent Claim 17 does not involve an inventive step**, pursuant to PCT Article 33(3) for the reasons set out below.

Claim 17 describes, in addition to Claim 6, the use

of the signal-noise ratio as a gauge for the transmission quality. However, the signal-noise ratio is a known gauge for transmission quality with the result that this feature is not inventive.

5. **The subject matter of dependent Claims 2-5 and 7-16 does not involve an inventive step**, pursuant to PCT Article 33(3).

The additional features of these dependent claims relate merely to embodiment examples, which are conventional practice or are already known from D1-D5. More particularly,

- i) in Claims 2, 8 and 11, determining the transmission data rate in relation to the transmission quality is already known from D1 (page 7, lines 7-12) and D2 (page 3, lines 47-51);
- ii) in Claim 3, determining the maximum transmission data rate using the error rate is already known from D1 (abstract, lines 4-6) and D2 (page 3, lines 47-51);
- iii) in Claim 4, the use of required transmission data rates and other requirements is already known from D2 (page 3, lines 30-40);
- iv) in Claims 5, 9 and 15, the different elements of the transmitter and the receiver and their arrangement and the connection between symbols and signal values are general knowledge in the art;

- v) in Claim 7, determining the transmission data rate in relation to the transmission quality determined and the modulation method is already known from D3 (pages 13-14);
- vi) in Claim 10, the additional feature is already known from the GSM standard (transmitter power adjustment of the base station);
- vii) in Claim 12, the connection between the transmission data rate and the coding method and mapping method is already known from D3 (page 13, lines 9-22);
- viii) in Claim 16, the signal-noise ratio is a gauge already known for transmission quality (see, for example, D2, page 2, lines 9-15).

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Dependent Claims 3, 7, 10, 11, 14 and 15 are not clearly defined (PCT Article 6) for the reasons set out below.

- i) Claims 11, 14 and 15 respectively define features that are already included in Claims 8, 6 and 9 respectively, on which they are dependent, in the same words. Consequently, these features are defined twice.
- ii) In Claim 3, "*the determination means (29)*" has not been defined earlier. Consequently, the use of the definite article is not appropriate.
- iii) In Claim 7, "*the modulation method (28)*" has not been defined earlier. Consequently, the use of the definite article is not appropriate.
- iv) In Claim 10, lines 14-20 appear to be there by mistake and are therefore not taken into consideration.